THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 38

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte GIORGIO PAGANI and UMBERTO ZARDI

Appeal No. 1997-2353
Application No. 08/405,912

ON BRIEF

Before GARRIS, PAK, and KRATZ, Administrative Patent Judges.

KRATZ, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-8. The remaining claims 9-17 have been withdrawn from further consideration by the examiner as drawn to a non-elected invention.

BACKGROUND

Appellants' invention relates to a method of producing urea with the aim of increasing the production capacity while reducing energy consumption (specification, page 2). An understanding of the invention can be derived from a reading of exemplary claim 1, which is reproduced below.

1. A continuous process of producing urea comprising the steps of:

- reacting ammonia and carbon dioxide in a first reaction space at high temperature and pressure, the ammonia/carbon dioxide ratio being less than 3;

- effecting a gas stripping with said carbon dioxide of a first reaction mixture leaving said first reaction space;

- feeding the stripped first reaction mixture to a first urea recovery section;

- feeding high purity ammonia and carbon dioxide to a second reaction space;

- feeding a second reaction mixture including urea, carbamate and unreacted ammonia leaving said second reaction space, to a second recovery section;

- separating urea, carbamate and unreacted ammonia in said second recovery section;

- recycling the carbamate and unreacted ammonia leaving said second recovery section respectively to said first and second reaction spaces.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Inoue et al. (Inoue)	4,504,679	Mar. 12, 1985
Zardi	4,613,696	Sep. 23, 1986
Pagani (European Patent)	0,479,103	Apr. 08, 1992

Claims 1-8 stand rejected under 35 U.S.C. § 103 as being unpatentable over Pagani in view of Inoue and Zardi.

OPINION

We have carefully considered all of the arguments advanced by appellants and the examiner and agree with appellants that the aforementioned rejection is not well founded. Accordingly, we reverse this rejection.

Pagani discloses an industrial process for producing urea from carbon dioxide and ammonia wherein a so called high yield reactor is added to a lower yield reactor and a recovery system (page 3, lines 3-12). As urged by appellants (brief, pages 4-7 and reply brief), the examiner has not convincingly explained how Pagani and the other applied references teach or would have suggested several of the process features required by the claims on appeal herein including the use of a second recovery section (in addition to a first recovery section associated with a first reaction space) for separating urea,

carbamate and unreacted ammonia from the reaction mixture leaving a second reaction space and for recycling of the carbamate, respectively, to the first reaction space and the ammonia to the second reaction space. We note that the examiner is of the opinion that "Pagani does not teach recycling of carbamate and unreacted ammonia, and separation of urea, carbamate and unreacted ammonia" (answer, page 4).

The examiner does assert, however, that Inoue discloses separating excess ammonia and carbamate in the synthesis of urea and that "recycling of carbamate and unreacted ammonia is old in the art . . ." of urea synthesis as disclosed by Zardi (answer, page 4). According to the examiner (answer, page 4),

> [i]t would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to modify Pagani, by introducing a separation step of separating excess of ammonia, carbamate, as taught by Inou [sic] et al., or alternatively, recycling unreacted ammonia and carbamate, as taught by Zardi, because the latter references expressly teach such modification, with the reasonable expectation of achieving a successful process of obtaining high yield of urea, absent evidence to the contrary.

Appellants argue that "[i]t is difficult to see where the examiner can find a suggestion of this kind" (brief, page 5). We agree. While the examiner (answer, pages 5 and 6) refers to various lines of pages 1-3 of Pagani as teaching the use of

a second recovery section and recycle steps corresponding to the second recovery section and directed recycling of the carbamate and unreacted ammonia of appellants' process, we do not find support for such in the cited sections of Pagani wherein only a single recovery section is employed. Compare figures 2 and 3 of Pagani wherein a single recovery section is employed for both reactors with appellants' figure 1, wherein a second recovery section is disclosed. Nor has the examiner convincingly explained how the other applied references would remedy this deficiency.

The examiner's commentary (answer, pages 5 and 6) including the supposition that "there are [a, sic] million ways that the process can be modified . . ." (answer, page 6) does not adequately explain why one of ordinary skill in the art, given the applied references but not appellants' disclosure, would have been led to modify the process of Pagani in a manner to arrive at a process corresponding to the claimed process herein with a reasonable expectation of success in so doing. *See In re Vaeck*, 947 F.2d 488, 493, 20 USPQ2d 1438, 1443 (Fed. Cir. 1991)*; In re O'Farrell*, 853 F.2d 894, 902, 7 USPQ2d 1673, 1680 (Fed. Cir. 1988); *In re Longi*,

759 F.2d 887, 892-93, 225 USPQ 645, 648 (Fed. Cir. 1985).

Consequently, the examiner has not carried the burden of establishing a *prima facie* case of obviousness of appellants' claimed invention.

CONCLUSION

The decision of the examiner to reject claims 1-8 under 35 U.S.C. § 103 as being unpatentable over Pagani in view of Inoue and Zardi is reversed.

REVERSED

BRADLEY R. GARRIS Administrative Patent Judge	)
CHUNG K. PAK Administrative Patent Judge	) BOARD OF PATENT) APPEALS) AND) INTERFERENCES
PETER F. KRATZ Administrative Patent Judge	)

PFK:lmb

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APPEAL NO. 1997-2353
APPLICATION NO. 08/405,912

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APJ PAK

DECISION: Reversed

Prepared By: LESLEY BROOKS

DRAFT TYPED: 21 Dec 00

FINAL TYPED: